

## **EXHIBIT B**



**MENDOZA VS. NIETO, ET AL**

**Burton & Associates Case No: 11-503**

**Prepared for: Aizar Karam**

**Report date: April 27, 2011**

**Report by: Paul R. Lewis, Jr., M.S., BME**

A handwritten signature in black ink, appearing to read "P. R. Lewis", written over a horizontal line.

(Signature line)

Page 2  
11-503  
Report

**Report Table of Contents:**

- 1. Section#1: Statement of Issues to be Addressed, page 3**
- 2. Section #2: Database and Summary of Pertinent Materials, page 4**
- 3. Section #3: Opinions and Support for Opinions, pages 5-16**
- 4. Section #4: Consideration for the Potential of Error, page 17**
- 5. Section #5:Qualifications and Methodology, page 18**

## **Section #1**

### **Statement of Issues to Be Addressed:**

I have been asked to evaluate this case in order to determine issues regarding a motor vehicle crash that occurred on August 8, 2009 in the State of Texas (“incident”). Desiree Mendoza (“Desiree”) was the driver of a 1999 Ford Mustang two-door vehicle (“Mustang”) that was struck by a 2006 Dodge Ram 2500 Mega-Cab pickup truck (“Dodge”). Desiree received severe and permanently debilitating head/brain injuries (“head/brain injuries”) in the incident.

The issues I have been asked to address are as follows:

- I. To describe the injuries sustained by the Desiree in as much detail as possible based on the currently available information and records.
- II. To determine the mechanism by which Desiree sustained her injuries in the incident. I have been asked to relate the occurrence of her injuries to the Mustang’s dynamics and her occupant kinematics. This includes determining what structure her head struck to cause her head/brain injury.
- III. To determine whether Desiree’s head/brain injury are proximally related to the altered height of the after-market front structures of the Dodge. Further, to determine had the Dodge truck been equipped with “OEM” height front structures, if Desiree would have received her head/brain injuries.

(End Section 1)

## **Section #2: Database**

In arriving at my present opinions I have considered the following case specific information:

1. TEXAS PEACE OFFICER'S CRASH REPORT
2. CRASH SCENE PHOTOGRAPHS
3. VALLEY BAPTIST MED CENTER RECORDS EXCERPTS FOR DESIREE MENDOZA
4. DEPOSITION OF KATHY NIETO (TAKEN 12/9/10)
5. DEPOSITION OF MARTIN NIETO (TAKEN 12/9/10)
6. ADDITIONAL VALLEY BAPTIST MEDICAL RECORDS FOR DESIREE MENDOZA
7. SOUTH TEXAS EMERGENCY CARE FOUNDATION RECORDS
8. PINKERMAN & GONZALEZ PSYCHOLOGICAL ASSOCIATES RECORDS
9. CD OF CT SCANS FOR DESIREE MENDONZA
10. PHOTOS OF DESIREE MENDONZA
11. PHOTOS OF SUBJECT VEHICLE IN STORAGE
12. CD OF VARIOUS DOCUMENTS RE: LIFT KITS AND BUMPER HEIGHTS
13. WILLACY COUNTY EMS RUN SHEET FOR DESIREE MENDOZA
14. LIFE CARE REHAB PLAN
15. REPORT OF STEVE BATZER DATED 3/10/11
16. WILLACY COUNTY EMS RUN SHEET FOR JUSTIN MENDOZA
17. VALLEY BAPTIST MEDICAL CENTER RECORDS FOR JUSTIN MENDOZA
18. DR. ALBERT SMITH RECORDS FOR JUSTIN MENDOZA
19. BETTER LIFE THERAPY CENTER RECORDS FOR JUSTIN MENDOZA

Additionally I have considered the following:

- 1) My personal inspection of the subject Mustang on April 11, 2011 at ABC Storage and Wrecker Service in Mission, Texas. On this same date I also traveled to the storage place of the Dodge pickup truck and had the opportunity to inspect it, as well as the site of the accident;
- 2) My evaluation of 252 side impact cases as a forensic investigator and primary consultant (Side Impact Case List);
- 3) Pertinent peer reviewed literature, studies, and testing regarding side impact accidents, and head/brain injuries and the mechanisms of their occurrence (Side Impact Bibliography and Head Injury Bibliography); and
- 4) My education, background, and training as a Biomedical Engineer, forensic investigator, and primary consultant (Paul Lewis, Jr.'s CV).

(End Section 2)

### **Section #3:**

#### **Opinions and Support of Opinions:**

- I. It is my opinion the primary injuries Desiree sustained in the incident were traumatic injuries to her head/brain including a large degloving laceration to her left scalp, a small depressed skull fracture in the left frontal region with associated brain contusion. Review of the medical records does not reveal that she sustained any other injury of significance.**

#### **Support for this opinion is provided in the medical records as follows:**

1. South Texas Emergency Care Foundation records:
  - She had laceration(s), swelling to the right ear to the face, abrasion to the pelvis, closed head injury with laceration on forehead about 3” long, contusions to the lower left arm.
  - Body diagram documents open laceration 3” to the forehead slightly to the left of midline and abrasions to the left pelvis.
  - Primary impression was “Open wound of head unspecified, complicated”
  - Secondary impressions were “Fractured skull closed, head injury unspecified, fracture neck, open wound of scalp complicated”.
  - Her GCS was less than or equal to 13, massive facial/neck injury, MVA T-bone to compartment, intubated patient.
2. Willacy County EMS Run Sheet:
  - Body diagram noted she had lacerations/penetration level 3 severity to the left forehead.
  - Patient had a 2X ½ inch laceration above left eye. Patient was vocally unresponsive and became combative in unit.
  - Her revised trauma score was 11.
3. Valley Baptist Medical Center records:
  - Consult report by Dr. Padilla stated she underwent head trauma with findings suggestive of a very small petechial contusion in the left frontal lobe, and a very small depressed skull fracture, non-surgical.

- CT scan showed a very small petechial hemorrhage in the left frontal region with a very small depressed skull fracture. Non-surgical at the time. She had a laceration in the left frontal region.
- Skull CT scan showed a small depressed skull fracture in the left frontal region with associated petechial contusion in that area. The doctor's opinion was that this was a small depressed fracture of the frontal bone with some minimal skull contusion and a minimal brain contusion.
- CT of her brain taken 24 hours after the motor vehicle accident showed no midline shift but there was a fairly large appearing soft tissue defect on the left forehead that is radiolucent, like a slight irregularity. There was a very localized fracture with the possibility of a minimally depressed inner table, and frontal lobe hemorrhagic contusion unchanged from earlier CT.
- On physical exam she was following very simple commands, but confused and not verbally responsive at this time. She had trauma with her wound in the left frontal area. She was anisocoric in the left eye with very minimal reaction compared to the other one. The pupils were approximately 6-7 mm on the left side and 4 mm on the right side with reaction. Assessment was cerebral contusion on the left side, Leukocytosis, Hypokalemia, Anisocoria.
- Critical care progress note stated a problem list that included 1) facial lacerations with brain contusions, 2) respiratory failure, mostly for airway protection. She apparently sustained a grade 1 to grade 2 brain contusion.
- Consult report dated September 8, 2009 stated left frontal hemorrhagic contusion, left non-hemorrhagic temporal lobe contusion and non-hemorrhagic contusion of the right midbrain, pons and cerebellar peduncle. She had a healed laceration of the left frontal forehead region. Review of the CT scan on admission showed no obvious temporal bone fracture. She now has hearing loss and left ear pain.
- Neurologic consult report dated September 16, 2009 stated she arrived in the hospital with a GCS of 4. Imaging studies revealed a non-surgical depressed skull fracture and MRI revealed significant cerebral contusions that involve the left medial frontal cortical area, the bilateral medial temporal lobes, and the right brain stem, including the mid-brain, the pons and the middle cerebellar peduncle. Persistent hyponatremia was a significant clinical issue and her imaging studies did suggest some mild contusions in the hypothalamic area.

- Her two greatest concerns were persistent blurred and double vision. She wore a patch over one eye, alternating between right and left. The patient developed, relatively recently, over the past several days, some intermittent paresthesia involving the left arm and the left leg. This does not seem to be in any particular radicular distribution and it also does not seem to be positional. She had multiple scrapes, abrasions and bruising to her extremities and a sutured laceration to her left upper forehead.
- Discharge Diagnosis was cerebral contusion, facial laceration.
- Operative report dated August 21, 2009 documented the complex laceration left forehead, approximately 7 cm in size located just between the hairline and the forehead. Examination under loupe magnification revealed a clean wound. There was abraded area of the bone just distal to where the opening of the wound was, which indicated that she had hit something that was capable of scraping bone. The wound margins were macerated.

**II. My opinions regarding the occurrence of Desiree's head/brain injuries in relation to her occupant kinematics during the incident are as follows:**

1. I have assumed that this incident occurred as described in the motor vehicle accident report and in the report of Engineer Stephen Batzer.
2. The incident occurred on Tuesday, August 18, 2009 at approximately 3:10 pm on FM1834 at its intersection with Wood County Road in City of Raymondville, Willacy County, Texas.
3. The Mustang was occupied by Desiree and her brother, Justin Mendoza, in the right front seat. The Dodge was being driven by Kathy Nieto.
4. Desiree was wearing her seatbelt at the time of the incident. This is supported by the accident report, medical records, and my personal inspection of the restraint system which revealed evidence consistent with usage during the incident.
5. The Dodge was traveling west on Wood County Road approaching FM 1834. The Mustang was traveling south on FM 1834 approaching the intersection of Wood County Road and FM 1834. Ms. Nieto failed to yield right of way at a stop sign and entered the intersection of FM 1834 and Wood County Road. Ms. Nieto swerved to the left to avoid hitting the Mustang.
6. The Dodge impacted the Mustang on the front driver side, causing the Mustang to spin a one quarter turn counterclockwise and came to rest on the

south west corner of the intersection, with the Dodge still engaged on top of the Mustang.

7. Engineer Batzer has calculated the following regarding the incident (listed as in his report):
  - The speed of the Mustang was approximately 33 mph at the point of impact.
  - Prior to impact the driver of the Mustang, applied her brakes. This is shown by the linear skid marks prior to point of impact. The travel velocity prior to her perception reaction was certainly greater than 33 mph, but since those skid marks length is recorded on the police report, it's not known how much her velocity diminished. Thus while she was traveling greater than 33 mph, it is not known by how much and there is no evidence that she was exceeding the speed limit.
  - The speed of the Ram was approximately 24 mph at the point of impact.
  - The lateral Delta-V of the car was calculated to be 16.2 mph (pushed to its right).
  - The axial Delta-V of the car was calculated to be 22.6 mph (deceleration).
  - The axial Delta-V of the truck was calculated to be 7.5 mph (backwards).
  - The lateral Delta-V of the truck was calculated to be 10.5 mph (truck pushed to its left).
  - From impact to rest the collision lasted approximately 2.1 seconds.
  - The distance from impact to rest was measured to be approximately 31.9 feet ( curve linear not point to point).
  - The 2 vehicles rotated approximately 137 degrees clockwise from impact to rest when viewed from above.
8. Desiree's body will move predominantly forward with some leftward movement as well during the Mustang's deceleration as a result of the left front/side impact by the Dodge.
9. During the deceleration her body will translate forward, be restrained by her seatbelt and her frontal airbag which deployed as a result of the collision.
10. As the vehicles' engagement continues through the crash pulse, the elevated front bumper structures of the striking Dodge impact and interact with the

Mustang's left A pillar/header and further invades into Desiree's occupant space. The right front corner of the Dodge bumper is rearward and across the Mustang steering wheel.

11. Desiree's head, while moving forward, and since she is restrained and the seatbelt is locked, her head will also move forward in an downward arc. Her head impacts most probably the right front corner of the primary "diamond-plate" bumper structure of the Dodge pickup truck.
12. As her head impacts the bumper, the bumper is continuing to translate laterally in relation to her forward-moving head and lacerates her scalp, impacts her skull and further abrades the bone under the flap of skin that is impacted.
13. The above impact and interaction with the intruding Dodge's bumper causes the her multiple skull fractures with underlying brain injury.
14. Reference the following police photograph. The yellow outlined area depicts the area of the Dodge's bumper that has intruded into the Mustang's occupant space. The green circle depicts the area where Desiree's head would have approximately been located.



15. The below police photograph depicts the over-ride of the Dodge pickup truck over the Mustang at rest.



#### Support

1. I have considered my vehicle examination and evaluation of available information including the reconstruction information in forming my opinions regarding the occupant kinematics.
2. I have considered the laws of force and motion, i.e. Newton's Laws, in applying the occupant's movement to the dynamics of the vehicle.
3. According to Engineer Batzer's reconstruction, the greater Delta V is in a longitudinal direction and is well below a 30 mph barrier crash for frontal impact compliance according to FMVSS 208. The lateral Delta V is below the FMVSS 214 side impact crash test specifications.
4. According to the specifications of these two tests, no occupant is supposed to, nor expected to, sustain life threatening and/or permanent injuries, especially to the head.
5. Furthermore, Desiree sustained no injuries associated with either impact but for her localized head/brain injuries from impact with the Dodge pickup truck's elevated front bumper.

Page 11  
11-503  
Report

6. Operative report from Valley Baptist Medical Center dated August 21, 2009 documented that the complex laceration to her left forehead was “clean” and there was abraded area of the bone just distal to where the opening of the wound was, which indicated that she had hit something that was capable of scraping bone. The wound margins were macerated. This description is consistent with her wound being caused by the Dodge pickup truck’s altered height bumper.
7. Photographs of Desiree depict the scar to the left upper forehead region have a geometrical orientation consistent with the shape and curvature of the right side of the Dodge’s bumper. Reference the following photograph with the area highlighted.



8. My opinions are supported by the damage profiles to both vehicles, as well as the forensic markings of the bumper curvature on her forehead. Reference the following photographs taken during my vehicle examination of the Dodge pickup truck’s bumper:



Photograph Number 591



Photograph Number 594

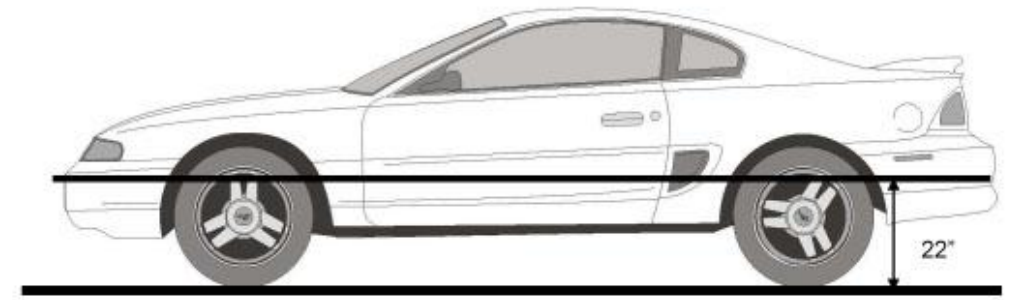
9. The elevated Dodge bumper is the most probable structure that has the mass and capability of causing significant closed head injury with multiple skull fractures in conjunction with abraded bone beneath the avulsed scalp.
10. I have considered my own personal evaluation of over 250 individual side impact cases which I have reviewed as a forensic investigator and primary consultant. (Side Impact Case List).
11. Additionally I have considered my research of side impact crashes in relation to my Masters Thesis of side impacts and injury.

Page 13  
11-503  
Report

- III. It is my opinion that had the Dodge been equipped with its OEM bumper or a bumper that conformed to the bumper height dimensions of the OEM bumper, the Dodge bumper would have engaged the appropriate structures of the Mustang that are designed to manage crash forces and would not have intruded/invaded into the Mustang's occupant survival space such that Desiree's head would have impacted it and caused her brain injury.**

**Support**

1. In Engineer Batzer's report, on page 16 there is a diagram depicting a 22 inch bumper height in relation to the side structures of the Mustang. Reference below.



2. This is also demonstrated in the following photograph taken during my vehicle inspection.



Photograph Numbered 398

Page 14  
11-503  
Report

3. This opinion is supported by Desiree's injury pattern, i.e. the lack of injury of significance to any other part of her body other than her head in the area it impacted the elevated Dodge's bumper, as well as the above listed description of the injury itself consistent with it being caused by the rigid, grated bumper structure.
4. There is evidence on the Mustang header of contact by the upper part of the Dodge's bumper. I documented this evidence, as well as Engineer Batzer in his report on page 10.
5. Reference the following photographs taken during my vehicle examination that show this evidence:



Photograph Numbered 367



Photograph Numbered 368

Page 15  
11-503  
Report



Photograph Numbered 369

6. Also, there is damage to the Mustang's airbag consistent with being caused by the Dodge's elevated bumper's height intrusion into the occupant survival space and tire marks on the Mustang's driver's door from the Dodge. Reference the following photographs again taken during my vehicle examination.



Photograph Numbered 420



Photograph Numbered 395

7. Scene photographs clearly depict the vehicles' engagement at rest.

All of the above opinions are based on the presently available case specific information, as well as my education, background and training as a biomechanical engineer, forensic investigator, and primary consultant. These opinions have been given to a reasonable degree of scientific, forensic and biomedical engineering probability and certainty. Should further information become available to alter these opinions, I reserve the right to amend them at that time.

(End Section 3)

#### **Section #4:**

#### **Qualifications and Methodology**

I am a Biomedical Engineer who provides expertise in biomedical/biomechanical engineering related to injury causation and prevention and occupant kinematics.

My educational background consists of a Master of Science in Biomedical Engineering from the University of Alabama Birmingham received in 1995 and a Bachelor of Science Industrial Engineering from the University of Alabama received in 1991.

From September 1996 through September 1998 I was an intern at the Office of the Medical Examiner in Metropolitan, Atlanta, Georgia. In September 1998 I began working for Burton & Associates, a consulting firm, which is now located in Alpharetta, Georgia.

As a Forensic Investigator and Primary Biomechanical Engineering Consultant I have assisted with on scene and follow up investigation of traffic fatalities, homicides, suicides and natural deaths. I have also assisted in postmortem examinations, autopsies and exhumations of victims to determine cause and manner of injuries and death.

As of 2011 I have been involved in the investigation of approximately 3,000 plus vehicle accidents involving fatality or significant injury. Further, I have been involved in numerous forms of testing simulating automobile accidents with and without dummies, and I have co-authored numerous papers pertaining to such. A list of these, as well as further details of my background and training, is contained in my attached Curriculum Vitae.

In my evaluation of the cases I review and of this specific case, I utilized the Scientific Method of Analysis in order to answer the questions that you have posed.

The Scientific Method requires the following: 1) A statement of the problem, 2) An orderly review and course of study involving the collection of facts, data and information concerning the problem to be addressed, 3) The formation of an opinion or hypothesis based on the evaluation of the above, 4) Testing the validity of the hypothesis. Such testing may take numerous and varied approaches and does not necessarily require some physical or mechanical test procedure, and 5) Consideration for the potential for error in the conclusions and opinions stated.

These principles are applied to my case investigation leading to the arrival of my conclusions in the following report specific to this case.

My charges for deposition and trial testimony are \$400 per hour.

**(End section 4)**

## **Section #5:**

### **Consideration for the Potential of Error**

In forming my opinions I have considered the laws of force and motion, the specific reconstruction of this case, the specific injuries sustained by Desiree, available case specific testimony, my education, background and training in injury analysis.

I have applied all of these principles to each and every one of my opinions given in this case. There is specific documentation for each in the facts of the case as well as in the provided and referenced literature. The potential of error in my given opinions for this case is, therefore, minimal to virtually none.

The error rate for impressions such as these are difficult to actually calculate and give a number or percent error probability.

The concept of error rate applies well to other types of investigations, such as statistical analyses, animal studies or human exposure studies of toxicity, or other studies of aggregated data. It is not a particularly applicable concept with respect to forensic evaluation of injury causation in a specific case.

The opinions I have given, however, have been to a reasonable degree of forensic, scientific and biomedical engineering probability and certainty.

The methodology that I have used in my approach to this case employed the scientific method of analysis. The methodology is that which has been employed by forensic and other scientists for over one hundred years in this country.

It is based on all of the above that I have formed my opinions in this case.

All of my current opinions have been and are based on my current understanding of the subject incident and presently available information. They are given to a reasonable degree of scientific, forensic, and biomedical engineering probability and certainty.

These opinions may be subject to further clarification or reconsideration if additional or converse information or facts are received.

**(End Section 5)**